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N. E. X.—A. R./34.

Indian Explosives Act (IV of 1884)
Indian Petroleum Act (VIII of 1899)

THIRTY-FIFTH ANNUAL REPORT

OF THE

Chief Inspector of Explosives
in India

Being his Annual Report for the year ending 31st March 1934

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1934

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Thirty-fifth Annual Report of the Chief Inspector of Explosives in India.

No. G.-28 (1)-11.

FROM

MR. P. W. ALLOWAY, F.C.S., F.F.Sc.,
Offg. Chief Inspector of Explosives in India.

TO

THE SECRETARY TO THE GOVERNMENT OF INDIA,
DEPARTMENT OF INDUSTRIES AND LABOUR,
SIMLA.

Calcutta, 3rd October 1934.

SIR,

I have the honour to submit herewith a report of the work of the Department of Explosives during the year ending 31st March 1934.

2. *Personnel.*—Dr. L. Nickels, B.Sc., Ph.D., A.I.C., Chief Inspector of Explosives in India, was granted leave out of India on full average pay for 4 months combined with leave on half average salary for 15 months and 28 days with effect from the 23rd March 1934 and will not rejoin the appointment on the expiry of his leave. He handed over charge to me on the forenoon of the 23rd March 1934.

I was granted leave out of India on average pay for 6 months and 2 days combined with leave on half average pay for 1 month with effect from the afternoon of the 2nd April 1933. On return from leave I assumed charge of my duties with effect from the forenoon of the 9th November 1933.

Mr. B. N. Pal, temporary Inspector of Explosives, was transferred from Calcutta to Lahore and was posted to the Northern India charge during the period I was on leave.

Mr. A. K. Sen, M.Sc., Inspector of Explosives, South Circle, Poona, was granted leave on average pay for 3 months and 21 days with effect from the 14th November 1933.

Mr. B. N. Pal, temporary Inspector of Explosives, was transferred to Poona and took over charge of the duties of the Inspector of Explosives, South Circle, Poona, during the period Mr. Sen was on leave.

On return from leave Mr. A. K. Sen assumed charge of the duties of the Inspector of Explosives, South Circle, Poona, with effect from the afternoon of the 7th March 1934, and Mr. B. N. Pal was transferred from Poona to Lahore and was posted to the Northern India charge with effect from the 9th March 1934 relieving me to officiate as Chief Inspector of Explosives.

The two temporary posts of Inspectors of Explosives held by Dr. M. K. Maitra, Ph.D. (London), D.I.C., A.R.C.S., A.I.C., and Mr. B. N. Pal, M.Sc., respectively, were made permanent with effect from the 1st March 1934.

Explosives.

3. *Number of magazines.*—During the year 1933, 206 licenses were granted in British India under Rule 46 and items 10 and 11 of Schedule II to the Indian Explosives Rules, 1914. The number of magazines licensed was 245 or 13 less than in 1932 and is in excess of the number of licenses granted, because in a number of cases firms have two or more magazines in one place under one license. The decrease was due to trade depression. A statement showing the number and location of the magazines and also the number of licenses granted in British India during the year 1933 is given in Appendix A, and a statement showing the number of magazines and licenses granted during the past ten years is shown in Appendix B.

4. *Inspection of explosives magazines during the year.*—During the year 132 inspections of magazines were made, a number of magazines being inspected two or three times. Those magazines are inspected most frequently which are situated in the neighbourhood of towns or in populous localities, or which contain large quantities of explosives, or any explosive which on account of its greater susceptibility to decomposition and possible ignition, it is considered advisable to examine and test more frequently than other explosives.

5. *Condition of magazines.*—The magazines generally are in good order, and as usual magazine-owners have been found most willing to carry out recommendations even when involving considerable expense, and my thanks are due to them for making my duties easy in this respect.

6. *Condition of explosives in magazines.*—The physical condition of all the explosives in the different magazines during the year was found to be good with the following exceptions, which were found to have become defective and were destroyed :—

- (a) 8,600 coils of Electric Powder Fuse, and 115 Misfired Electric Detonators from the magazine of Messrs. Gillanders Arbuthnot and Co., Agents, Nobel's Explosives Co., Ltd., at Merah (Barakar).
- (b) 11 Powder Fuses from the magazine of Messrs. Gillanders Arbuthnot and Co., Agents, Nobel's Explosives Co., Ltd., at Deshargarh.
- (c) 14 Electric Detonators from the magazine of Messrs. Shaw Wallace and Co. at Begunia.
- (d) 230 lbs. of Dynamite 60 per cent. and 72 R. ft. Safety Fuse from the magazine of the Port Engineer at Ras Morbat, Aden.
- (e) 100 lbs. of Gelignite from the magazine of the Chairmau, the Commissioners for the Port of Rangoon at Tadachaung.

7. *Thefts.*—During the year under report one case of theft of explosives was reported to this office.

8. *Import of explosives.*—Two thousand one hundred tons of explosives were imported into British India during the year 1933 the value being Rs. 23,12,930. Full details showing the different kinds of explosives imported, and the value of each is given in Appendix C. A comparative statement showing the quantity of explosives imported during the last 10 years is given in Appendix D.

9. *Authorised explosives.*—A list of explosives at present authorised for importation into British India was published in the *Gazette of India* for information and is given in Appendix E.

10. *Manufacture of explosives.*—Four licenses granted by the Governor-General in Council for the manufacture of gunpowder, *viz.*, one in the District of Manbhum in Bihar and Orissa, two in the Districts of Chanda and Chhindwara respectively in the Central Provinces, and one in the District of Jhelum in the Punjab, were renewed for the year 1934.

Two licenses granted by the Governor-General in Council for the manufacture of liquid oxygen explosives in the whole of British India and in the District of Hazaribagh in Bihar and Orissa respectively were also renewed for the year 1934.

A new license for the manufacture of Electric Sparklers in the Bombay Suburban District was granted by the Governor-General in Council during the year.

Petroleum.

11. *Number of Petroleum Premises.*—During the year under report, 9,086 licenses for the storage of dangerous and non-dangerous petroleum, regarding which this Department was concerned or consulted, were granted. A list of these premises, corrected up to 31st December 1933 and showing the districts in which they are located, is given in Appendix F.

12. *Storage of dangerous petroleum in bulk.*—A large number of special licenses was granted under rule 6, Chapter IV, Part II of the Petroleum Rules for the storage of dangerous petroleum in underground tanks fitted with pumps.

A large number of depôts for the storage of dangerous petroleum in bulk erected to plans approved by this Department has been taken into use.

13. *Combined storage of petrol, kerosene and liquid fuel.*—Several combined petrol, kerosene and liquid fuel depôts erected to plans approved by this Department have also been taken into use.

14. *Inspection of petroleum premises during the year.*—In all 1,758 inspections of petroleum premises were made. The smaller number is due to absence of two Inspectors of Explosives on leave during the year.

15. *Condition of major installations.*—The large petroleum installations are usually under efficient European supervision and are in good order and well looked after. There is, however, a tendency on the part of the newer oil firms to put in responsible charge of such installations employees with insufficient practical experience and technical knowledge.

16. Condition of minor installations.—The small or minor petroleum installations are installations in which not more than 50,000 gallons of kerosene or liquid fuel in combined bulk and non-bulk are stored. The oil for these installations is supplied from the major installations at the different ports, and the retail trade is carried out from them. A great deal of inspection of these minor installations has been done by this Department with the result that their condition is very much improved and the majority of them are in very good order. Exceptions are mainly to be found among the firms referred to in paragraph 15 above.

Accidents.

17. Number of accidents.—A list of accidents, with a short account of each, that have occurred with explosives, inflammable substances, dangerous goods, etc., between the 1st January and 31st December 1933 is given in Appendix G. It will be seen from a perusal of the details that practically all the accidents were caused by gross neglect of ordinary precautions. 25 such accidents resulting in 37 deaths and injuries to 45 persons were reported to this Department. Comparative statements given in Appendices I and J show the total number of accidents and the number of persons killed or injured by them during the last ten years. As stated in previous reports it is very doubtful whether all accidents that occur are duly reported to this Department and therefore, it is very possible that the statistics given are underestimated.

As a rule the only accidents that are entered in Appendix G are those which are non-political and cause loss of life or injuries or are important from some other point of view.

18. Gunpowder, Class I.—There was one accident from gunpowder during the year causing one death.

19. Nitro-Compounds, Class III.—No accident from nitro-compounds was reported during the year.

20. Chlorate Mixture, Class IV.—No accident from explosives classed as Chlorate mixtures was reported.

21. Fulminates, Class V.—Four accidents from fulminates causing two deaths and injuries to five persons were reported.

22. Ammunition, Class VI.—There was one accident from ammunition causing injury to one person.

23. Fireworks, Class VII.—Fourteen accidents from fireworks caused twenty-five deaths and injuries to thirty-seven persons.

24. Liquid Oxygen Explosives.—No accident from Liquid Oxygen Explosives was reported during the year.

25. Petroleum.—There were four accidents from petroleum during the year, which were responsible for eight deaths and injury to one person. It will be seen from a perusal of the accidents in Appendix G that carelessness is a prominent feature in most of them. In India the petroleum accidents are caused usually by naked lights being brought into close proximity to oil vapour.

26. A number of fires was reported to this office as having occurred during the year in the Burma Oilfields.

27. *Chemicals*.—No accident from chemicals was reported.

28. *Miscellaneous*.—There was one miscellaneous accident causing death to one person and injury to another.

General Remarks.

29. *Government Magazines in charge of civil officers*.—Eighteen reports of inspection of these magazines by civil officers have been received in this office, and I have brought to the notice of the officers concerned any irregularities or defects which required remedying. There is no doubt that the introduction of this system of sending these reports to this office has been desirable. I have come across a good many instances of ignorance and want of expert knowledge, which might have caused disasters. High explosives in these magazines had previously, frequently, never been tested, and I have, in dealing with these reports, recommended always that samples of these explosives should be sent at least once a year to Chemical Examiners for test.

Three Railway magazines were inspected by this Department during the year.

30. *Shortage of High Explosives*.—No shortage of high explosives was reported during the year.

31. *Explosives Rules*.—In their Notification No. M-296, dated the 9th November 1933, the Government of India amended Rule 35 of the Indian Explosives Rules, 1914, relating to the possession and distribution of any explosive in an aircraft or aerodrome.

In their Notification No. M-1099, dated the 16th November 1933, the Government of India amended Rule 12 of the Indian Explosives Rules, 1914, so as to permit the importation of Chinese Crackers into the Port of Cuddalore.

The Government of Burma have delegated to the "Assistant Warden, Chauk", the power to grant or renew licenses in Form J under the Indian Explosives Rules, 1914, in the Chauk and Yenangyat notified oilfields.

32. *Packing of Detonators*.—The period for which the importation into British India by the Agents of Messrs. Nobel's Explosives Co., Ltd., of Detonators packed in cases with a clear space of not less than one inch, instead of not less than three inches as required by the regulations for package of explosives given in Schedule IV to the Indian Explosives Rules, 1914, was agreed to, was further extended by one year from 6th June 1933.

33. *A. I. Rounkol, Dynamite B and Nobel cordite*.—The explosives referred to were allowed to be imported into British India.

34. *Cordeau Bickford*.—In reply to an enquiry relating to the handling of Cordeau Bickford at Ports, I have stated that it should be treated as Safety Fuze and landed at the Ship Wharves.

35. *Chinese Sand Crackers*.—In reply to an enquiry from the Commissioner of Police, Calcutta, regarding the classification of Chinese sand Crackers, I have stated that as the Crackers contain Fulminate of silver, they come under Class V.

36. *Potassium Chlorate, Barium Chlorate and Barium Compound.*—On a reference received from the Manager, Bombay Port Trust Docks, Bombay, I have advised him that when unmixed with sugar, sulphur and other chemicals with strong affinity for oxygen or similar compounds, Potassium Chlorate, Barium Chlorate and other Barium compounds may be regarded as perfectly safe when packed in wooden kegs or metal drums. They should not, however, be stored or carried in the same compartment as such compounds. There is no need for any special regulations governing the handling in the Dock Area of Potassium and Barium Chlorates.

37. *Yellow Phosphorus.*—With reference to an enquiry from the District Magistrate, Sukkur, I have stated that no permit under the Indian Explosives Act is necessary for the importation of Yellow Phosphorus, as it is, in itself, not an explosive but in view of the very poisonous properties of the substance no such permit should be granted until the local Health Department is satisfied that adequate precautions have been taken with a view to preserving health of the workers.

38. *Petroleum Rules.*—The Government of India have sanctioned the amendment of conditions endorsed on Forms H and I-I appended to the Petroleum Rules in force in the various Presidencies and Provinces so as to provide for the transport of dangerous petroleum in tank wagons by road.

At the suggestion of this Department the Government of India have requested all Local Governments and Administrations to issue the necessary instructions to all licensing authorities that liquid fuel or fuel oil even if it has a flash point above 200°F. comes within the definition of petroleum as given in Section 2 (a) of the Indian Petroleum Act, 1899, and a license is necessary under the Act for its storage and transport in quantities exceeding 500 gallons whether in bulk or non-bulk.

In their Notification No. 112 V 33 (R. N. 153), dated 5th August 1933, the Government of Burma have amended the conditions to be attached to permission to refine petroleum in a refinery with a daily average still capacity not exceeding 1,000 gallons and with a daily average still capacity of over 1,000 gallons respectively.

In their Notification No. 2984 Law (General), dated 6th September 1933, the Government of Madras, in consultation with this Department, have allowed the use of country boats with small tanks aggregating 5,000 gallons for the transport of non-dangerous petroleum in bulk by canals in the Madras Presidency, where facilities for such transport exist, subject to certain conditions.

Malariaol.—In their Notification No. 3325-R., dated 4th November 1933, the Government of Assam have exempted from all the operations of the provisions of the Indian Petroleum Act, all "Malariaol" in any quantity which has its flashing point at or above 120°F. which is imported as ordinary cargo and is used for anti-malarial purposes.

In their Notification No. 48, dated 14th November 1933, the Government of Burma have amended the Petroleum Rules in force in that province by the deletion of Rule 10, Chapter V, Part II of the Rules relating to the transport of dangerous petroleum in bulk from places of production to refineries.

In their letter No. 9781-A., dated 15th November 1933, the Government of Bombay, in consultation with this Department, granted permission, as a special case, to the Burmah-Shell Oil Storage and Distributing Co., to carry petroleum in the double bottom compartments of the Bombay Steam Navigation Co.'s vessels "Bhadravati" and "Dayavati" from Bombay to Bhavnagar subject to certain conditions.

In their Notification No. 3656-R., dated 5th December 1933, the Government of Assam have amended Rule 4 of the Rules relating to the refining and testing of petroleum produced in Assam.

In their Notification No. 581-Com., dated 22nd January 1934, the Government of Bengal have amended Rule 14, Chapter IV, Part II and Rules 16 and 24, Part III of the Petroleum Rules in force in the Bengal Presidency, regarding discharge and storage of non-dangerous petroleum at the King George's Docks.

In reply to a reference received from the Standard Vacuum Oil Company, Calcutta, I have agreed to the discharge of dangerous petroleum in cases at kerosene jetty at Budge Budge provided that the packed petrol is not discharged simultaneously with non-dangerous petroleum.

39. *Amylene*.—With reference to an enquiry, I have informed the Commissioner of Police, Calcutta, that Amylene, which contains petroleum and also has a very low flash point, should be treated as dangerous petroleum.

40. *Asphalt roofing and Asphalt felt*.—In reply to an enquiry from the Commissioners for the Port of Calcutta, I have stated that in my opinion Asphalt roofing and Asphalt felt should be classed as "pitch". They are neither of them very dangerous.

41. *Creosote Oil*.—With reference to an enquiry from the Commissioners for the Port of Calcutta, I have stated that according to Section 2 (a) (ii) of the Indian Petroleum Act, Creosote Oil comes under the definition of "Petroleum" and as such, is subject to the provisions of the Act.

42. *Flintkote Asphalt Emulsion*.—In reply to an enquiry from the Burmah-Shell Oil Storage and Distributing Company of India, Limited, Calcutta, they were informed that Flintkote Asphalt Emulsion did not come within the scope of the Indian Petroleum Act.

43. *Acetone Oil*.—In reply to an enquiry from Messrs. Macfarlane & Co., Calcutta, regarding the storage of Acetone Oil, I have advised them that the oil does not come under the Indian Petroleum Act and no license for its storage is therefore necessary under the Act. As it is a very inflammable liquid, due precautions should be taken as to its storage.

44. *Lithographic Varnish*.—With reference to an enquiry from the Traffic Manager, E. B. Railway, Calcutta, I have suggested that "Lithographic Varnish" should be regarded as a non-dangerous article for purposes of carriage by rail. The Varnish is not an oil or spirit containing varnish.

45. *Automobile Thinner*.—In reply to an enquiry from the Chief Traffic Manager, G. I. P. Railway, Bombay, I have informed him that Automobile Thinner, which flashes below 40° F. should be classified as dangerous petroleum.

46. *Use of empty petrol tank wagons for the transport of Methylated spirit on their return journey*.—With reference to an enquiry I have informed the

Agent, North Western Railway, Lahore, that empty petrol tank wagons may be used for the transport of Methylated Spirit on their return journey provided kerosene tank wagons are not used and the wagons used for the above purpose are only unloaded in an isolated place and not at goods platforms.

47. *Sulphur*.—With reference to an enquiry, I have advised the Postal Department that sulphur is not an explosive and only difficultly inflammable. Further, in the absence of a supply of air, any flame is easily extinguished. I do not consider it to be a dangerous substance.

48. *Country Spirit*.—With reference to an enquiry, I have advised the Postal Department that all country spirits having a flash point of 96° F. or below should be regarded as dangerous; that is, all spirits having a greater strength than approximately 60° underproof (24 per cent. alcohol by volume).

49. *French Polish*.—In reply to an enquiry from the Commissioner of Police, Calcutta, he was informed that French Polish which was composed of shellac, methylated spirit and oxalic acid did not come within the purview of the Indian Petroleum Act.

50. *Nilab*.—This Department was consulted with regard to the classification of Nilab. It was advised that the substance should be treated as a general commodity for the purpose of transport by rail as it was found to be a strong solution of copper nitrate with only traces of free Nitric Acid.

51. *Ethyl Fluid*.—This Department was consulted regarding the importation of Ethyl Fluid in certain Ports in India.

52. *Ethyl Aviation Spirit*.—This Department was consulted regarding the conveyance of Ethyl Aviation Spirit by rail.

53. *Transport of Concentrated Ethyl Fluid (solution of Lead Tetra Ethyl in Ethylene Dibromide) by rail*.—This Department was consulted on the subject of conveyance by rail of concentrated Ethyl Fluid (solution of Lead Tetra Ethyl in Ethylene Dibromide). The necessary rules have been included in the Red Pamphlet.

54. *Valamoid Roof Cement and Valamoid Priming Liquid*.—This Department was consulted with regard to the classification of Valamoid Roof Cement and Valamoid Priming Liquid. It was advised that the substances should be regarded as non-dangerous goods for the purpose of carriage by rail.

55. *Carriage of Compressed Gas Cylinders in ships*.—This Department was also consulted with regard to the carriage of Compressed Gas Cylinders in ships and to the examination of such cylinders before shipment.

56. *Gases and liquids under pressure*.—In reply to a reference received from the Manager, Bombay Port Trust Docks, I have suggested certain regulations relating to the importation and shipment of gases and liquids in cylinders in Bombay Dock By-law No. 110.

57. *"Poysha" Insecticide Fluid*.—On a reference received from the Chief Traffic Manager, G. I. P. Railway, Bombay, I have informed him that "Poysha" Insecticide Fluid is inflammable.

58. *Enquiries.*—A very large number of enquiries of a varied nature were received during the year from District Officials, private individuals, firms, Port authorities and Railways. These were all dealt with.

59. *Red Pamphlet.*—This Department was consulted by the Indian Railway Conference Association in connection with numerous amendments and additions to the rules contained in Red Pamphlet No. 11 (Rules and Rates for the conveyance of Explosives and other Dangerous Goods by Rail).

60. *Number of Inspections made.*—The number of inspections done by this Department during the year was 1,890 and was less than that in the last year. The decrease was partly due to retrenchment in the grant for travelling allowances and partly to the fact that two Inspectors were on leave for about 7 months and 4 months respectively. To give some idea of the work and the ground covered, I give the following details of the work done by the Inspectors of Explosives :—

During the 12 months, 1st April 1933 to 31st March 1934, the four Inspectors, *viz.*, two at Calcutta and one each at Poona and Lahore, were away from their headquarters for 163, 168, 129 and 82 days and travelled 40,976, 31,756, 27,689 and 16,638 miles respectively.

The Chief Inspector and the temporary Chief Inspector of Explosives were on tour for 112 days, travelled 21,218 miles and inspected 45 explosives magazines and 100 petroleum premises, and went on inspection duty to the Punjab and Burma Oilfields and visited the ports of Calcutta, Chittagong, Bombay, Karachi, Madras, Moulmein and Rangoon.

The ordinary inspection work of the officers of this Department has been considerably interfered with during the year under review owing to the number of times that they have been called away, or summoned to appear in Courts, in connection with criminal and other cases. Although the Government of India, Home Department, had requested all Local Governments to issue instructions to the prosecuting agencies in the courts of the provinces to restrict the issue of summonses on the Chief Inspector and Inspectors of Explosives for appearance in Magistrates' Courts to the minimum consistent with the requirements of a case and to press for taking their evidence on Commission in suitable cases, where it was necessary to have their evidence in such courts, the officers of this Department received a large number of summonses to appear in Magistrates' Courts.

I have the honour to be,

SIR,

Your most obedient Servant,

P. W. ALLOWAY,

Offg. Chief Inspector of Explosives in India.

APPENDIX A.

List of Magazines and Licenses granted under Rule 46 and items 10 and 11 of Schedule II of the Indian Explosives Rules, 1914, for the year 1933.

Presidency or Province.	District.	MAGAZINES.			LICENSES.		
		Under renewed license.	Under new license.	TOTAL.	Renewed.	New.	TOTAL.
Aden	Aden	5	...	5	4	...	4
	TOTAL	5	...	5	4	...	4
Assam	Lakhimpur	5	...	5	5	...	5
	Naga Hills	1	...	1	1	...	1
	TOTAL	6	...	6	6	...	6
Bengal	Burdwan	11	...	11	8	...	8
	Darjeeling	2	...	2	2	...	2
	Hooghly	4	...	4	1	...	1
	Howrah	1	...	1	1	...	1
	24-Parganas	2	...	2	1	...	1
	TOTAL	20	...	20	13	...	13
Bihar and Orissa	Gaya	3	...	3	3	...	3
	Hazaribagh	15	1	16	12	1	13
	Manbhum	26	...	26	24	...	24
	Sambalpur	1	...	1	1	...	1
	Santal Parganas	2	...	2	2	...	2
	Singhbhum	7	...	7	6	...	6
	TOTAL	54	1	55	48	1	49

APPENDIX A—contd.

List of Magazines and Licenses granted under Rule 46 and items 10 and 11 of Schedule II of the Indian Explosives Rules, 1914, for the year 1933—contd.

Presidency or Province.	District.	MAGAZINES.			LICENSES.		
		Under renewed license.	Under new license.	TOTAL.	Renewed.	New.	TOTAL.
Bombay . . .	Ahmedabad . .	4	...	4	4	...	4
	Bombay . . .	9	...	9	5	...	5
	Bombay Suburban.	5	1	6	5	1	6
	Broach and Panch Mahals.	3	1	4	3	1	4
	Dharwar . . .	1	...	1	1	...	1
	Kaira . . .	...	1	1	...	1	1
	Karachi . . .	5	...	5	3	...	3
	Kolaba . . .	1	...	1	1	...	1
	Ratnagiri . .	1	...	1	1	...	1
	Surat . . .	2	...	2	2	...	2
	TOTAL . . .	31	3	34	25	3	28
Burma . . .	Amherst . . .	1	...	1	1	...	1
	Bassein . . .	1	...	1	1	...	1
	Hantawaddy . .	4	...	4	2	...	2
	Magwe . . .	1	...	1	1	...	1
	Mandalay . . .	1	...	1	1	...	1
	Myitkyina . .	1	...	1	1	...	1
	Northern Shan States.	9	...	9	5	...	5
	Pakoku . . .	1	...	1	1	...	1
	Pegu . . .	1	...	1	1	...	1
		Carried over . .	20	...	20	14	...	14

APPENDIX A—contd.

List of Magazines and Licenses granted under Rule 46 and items 10 and 11 of Schedule II of the Indian Explosives Rules, 1914, for the year 1933—contd.

Presidency or Province.	District.	MAGAZINES.			LICENSES.		
		Under renewed license.	Under new license.	TOTAL.	Re-newed.	New.	TOTAL.
Burma—contd.	Brought forward	20	...	20	14	..	14
	Tavoy . . .	6	...	6	4	...	4
	Thaton . . .	7	...	7	6	...	6
	Toungoo . . .	1	...	1	1	...	1
	TOTAL . . .	34	...	34	25	...	25
Central Provinces . . .	Balaghat . . .	2	...	2	2	...	2
	Bhandara . . .	1	...	1	1	...	1
	Bilaspur . . .	1	...	1	1	...	1
	Chanda . . .	5	...	5	5	...	5
	Chhindwara . . .	6	2	8	6	2	8
	Jubbulpur . . .	2	...	2	2	...	2
	Nagpur . . .	3	...	3	3	...	3
	Raipur . . .	3	...	3	4	...	4
	TOTAL . . .	23	2	25	24	2	26

APPENDIX A—concl'd.

List of Magazines and Licenses granted under Rule 46 and items 10 and 11 of Schedule II of the Indian Explosives Rules, 1914, for the year 1933—concl'd.

Presidency or Province.	District.	MAGAZINES.			LICENSES.		
		Under renewed license.	Under new license.	TOTAL.	Renewed.	New.	TOTAL.
Madras	Chingleput . . .	1	...	1	1	...	1
	Chittoor . . .	2	1	3	2	1	3
	Coimbatore . . .	1	...	1	1	...	1
	Guntur . . .	2	...	2	2	...	2
	Madras . . .	16	...	16	9	...	9
	Madara . . .	3	...	3	3	...	3
	Nellore . . .	2	...	2	1	...	1
	North Arcot . . .	2	...	2	2	...	2
	South Arcot . . .	4	...	4	4	...	4
	Tanjore . . .	13	1	14	13	1	14
	Tinnevelly . . .	2	...	2	2	...	2
	Trichinopoly . . .	5	...	5	5	...	5
Vizagapatam . . .	3	...	3	2	...	2	
	TOTAL	56	2	58	47	2	49
Panjab	Attock . . .	4	...	4	2	...	2
	Jhelum . . .	2	...	2	2	...	2
	TOTAL	6	...	6	4	...	4
United Provinces .	Meerut . . .	1	...	1	1	...	1
	Shahjahanpur . . .	1	...	1	1	...	1
	TOTAL	2	...	2	2	...	2

SUMMARY.

Presidency or Province.	MAGAZINES.			LICENSES.		
	Under renewed license.	Under new license.	TOTAL.	Renewed.	New.	TOTAL.
Aden	5	...	5	4	...	4
Assam	6	...	6	6	...	6
Bengal	20	...	20	13	...	13
Bihar and Orissa . .	54	1	55	48	1	49
Bombay	31	3	34	25	3	28
Burma	34	...	34	25	...	25
Central Provinces . .	23	2	25	24	2	26
Madras	56	2	58	47	2	49
Punjab	6	...	6	4	...	4
United Provinces . .	2	...	2	2	...	2
TOTAL	237	8	245	198	8	206

APPENDIX B.

Summary of Magazines and Licenses granted under Rule 46 and items 10 and 11 of Schedule II for the 10 years ending 1933.

YEAR.	MAGAZINES.			LICENSES.		
	Under renewed license.	Under new license.	TOTAL.	Renewed.	New.	TOTAL.
1924	247	31	278	204	28	232
1925	263	16	279	218	14	232
1926	265	19	284	218	18	236
1927	247	13	260	207	13	220
1928	258	19	277	217	16	233
1929	264	14	278	221	14	235
1930	268	8	276	226	8	234
1931	267	9	276	223	9	232
1932	251	7	258	210	7	217
1933	237	8	245	198	8	206

APPENDIX C.

Statement showing the imports of explosives by sea into British India from other countries in the year 1933.

Explosives.	Bengal.	Bombay.	Sind.	Burma.	Madras.	TOTAL.
<i>Quantity.</i>						
Gunpowder, black . lbs.	16,140	71,075	5,700	—	4,215	97,130
„ smoke- less. „	3,050	10	—	300	2,700	6,060
Dynamite . . „	60,000	21,250	44,150	22,500	55,000	202,900
Blasting gelatine . „	5,100	1,250	—	110,000	396,100	518,450
Gelignite or gela- tine dynamite.	400,000	43,750	—	109,500	157,100	710,350
Other nitro-com- pound explosives.	60,000	—	—	—	—	60,000
Detonators . No.	1,223,000	165,150	10,000	440,000	1,460,000	3,298,150
Fireworks . lbs.	135,298	1,779,878	12,735	106,169	571,394	2,605,474
TOTAL „	679,588	1,917,213	62,585	354,469	1,186,509	4,200,364
TOTAL No.	1,223,000	165,150	10,000	440,000	1,460,000	3,298,150
<i>Value in rupees.</i>						
Gunpowder, black .	14,780	39,135	3,413	—	2,531	59,919
„ smokeless .	8,334	66	—	470	1,783	10,653
Dynamite . . .	43,377	15,829	116,000	28,359	39,700	243,265
Blasting gelatine . .	4,372	1,109	—	116,270	330,875	452,626
Gelignite or gelatine dynamite.	277,597	31,980	—	113,264	119,647	542,488
Other nitro-compound explosives.	35,229	—	—	—	—	35,229
Detonators . . .	31,649	6,265	33,000	23,529	28,506	122,949
Fireworks . . .	68,228	527,652	11,459	38,307	200,155	845,801
TOTAL	483,566	622,096	163,872	320,199	723,197	2,312,930

APPENDIX D.

Comparative statement showing the imports of explosives by sea into British India from other countries for the ten years ending 1933.

Explosives.	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
Gunpowder, black . . . lbs.	340,886	361,255	299,440	178,550	164,100	111,680	127,875	71,750	62,951	97,130
" smokeless . . . "	39,407	17,437	28,250	21,238	11,567	15,950	14,888	16,355	5,645	6,060
Dynamite "	398,122	500,700	315,200	364,750	451,550	495,750	386,050	226,300	67,500	202,900
Blasting gelatine . . . "	486,900	457,995	316,050	271,500	410,800	492,800	245,500	396,850	536,500	518,450
Gelignite or gelatine dynamite . "	494,800	1,096,200	663,500	924,001	1,126,700	1,082,000	920,050	1,088,706	761,500	710,350
Other nitro-compound explosives "	..	80,350	73,250	150,025	130,000	221,500	203,000	142,400	131,050	60,000
Detonators No.	4,115,050	6,881,024	6,242,556	6,910,498	8,872,023	8,022,326	6,446,558	5,395,946	4,393,994	3,298,150
Fireworks lbs.	3,800,633	3,397,572	4,970,986	3,819,378	4,422,887	4,940,692	2,244,621	1,203,083	1,881,039	2,605,474
TOTAL . . . "	5,560,748	5,911,509	6,668,676	5,729,742	6,717,604	7,360,372	4,141,984	3,145,144	3,446,185	4,200,364
TOTAL . . . No.	4,115,050	6,881,024	6,242,556	6,910,498	8,872,023	8,022,326	6,446,558	5,395,946	4,393,994	3,298,150

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APPENDIX E.
DEPARTMENT OF EXPLOSIVES.

DEPARTMENT OF EXPLOSIVES.

NOTIFICATION.

Calcutta, the 28th June 1934.

No. E.-11 (1).—*Corrigendum.*—In this Department Notification No. E.-11 (1), dated the 24th April 1934 published on pages 759-763 of Part II of the Gazette of India dated the 23rd June 1934, substitute "explosive" and "non-explosive" in lines 4 and 6 of the definition under Class 2—Nitrate Mixture for "explosives" and "non-explosives" respectively, also substitute "Bobbinite" for "Robbinitite" in the list of explosives given under the above heading. Insert "Cartridges for Small Arms which are not Safety Cartridges" below the entry "Cartridges for Blasting or other like purposes" in the list of Explosives given under Class 6—Ammunition, Division 2.

P. W. ALLOWAY,
Offg Chief Inspector of Explosives in India.

DEPARTMENT OF EXPLOSIVES

NOTIFICATION

Commencing the 28th June 1934.

No. 21 (1) - (Amendments).—In this Department Notification No. 11 (1) dated the 24th April 1934 published on pages 100-101 of Part II of the Gazette of India dated the 23rd June 1934, certain "explosives" and "non-explosives" in lines 4 and 5 of the definition under Clause 2(a) of the said Notification, and "non-explosives" respectively, also substituted "Bobbins" for "Bobbins" in the list of explosives given under the above heading in Part I of the said Notification, in the entry "Bobbins for blasting or other like purposes" in the list of Explosives given under Clause 2 - Amendment Division 2.

D. W. ALLWAY,

Chief Inspector of Explosives in India

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APPENDIX E.

DEPARTMENT OF EXPLOSIVES.

NOTIFICATION.

Calcutta, the 24th April 1934.

No. E. 11 (1).—With reference to the following Notifications publishing rules to regulate the manufacture, possession, sale, transport and importation of explosives, the following list of "Authorised Explosives" referred to in the rule mentioned against each Notification is published for general information:—

- Rule 4 (3) of Notification No. 4013—33, dated the 6th June 1914, of the Government of India, Department of Commerce and Industry.
- Rule 4 (3) of Notification No. 1183, dated the 11th November 1914, of the Chief Commissioner, Central Provinces, applicable to Berar.
- Rule 4 (3) of Notification No. 14, dated the 23rd April 1915, of the Resident in Mysore applicable to the Civil and Military Station of Bangalore and on the Railways in Mysore under British jurisdiction.
- | | | |
|---|---|---|
| Rule 4 (3) of Notification No. 67-J., dated the 28th August 1914, | } | of the Resident at Hyderabad applicable to the Cantonments of Secunderabad and Aurangabad, the Hyderabad Residency Bazars and the Railway lands in the Hyderabad State. |
| Rule 4 (3) of Notification No. 84-J., dated the 20th April 1915, | } | |
- Rule 3 (3) of Notification No. 99, dated the 19th July 1916, as amended by Notification No. 41, dated the 30th July 1928, of the Government of Burma applicable to the Federated Shan States.
- Rule 3 (3) of Notification No. 5313, dated the 29th October 1918, of the Agent to the Governor General in Rajputana.
- Rule 3 (3) of Notification No. 1812-B., dated the 10th November 1919, of the Agent to Governor General in Central India, applicable to Railway lands in Central India, specified in the Notification of the Government of India in the Foreign Department No. 261-I.B., dated 10th February 1913.

LIST OF AUTHORISED EXPLOSIVES.

The following explosives are at present authorised for importation into British India for general sale:—

CLASS 1.—GUNPOWDER.

The term "gunpowder" means gunpowder ordinarily so-called.

GUNPOWDER.

CLASS 2.—NITRATE MIXTURE.

The term "nitrate mixture" means any preparation, other than gunpowder ordinarily so-called, formed by the mechanical mixture of a nitrate with any form of carbon or with any carbonaceous substance not possessed of explosives properties, whether sulphur be or be not added to such preparation, and whether such preparation be or be not mechanically mixed with any other non-explosives substance, and includes any explosive containing a perchlorate and not being a chlorate-mixture, fulminate or nitro-compound as defined in Rule 4 of the Indian Explosives Rules, 1914.

EVERY BLASTING EXPLOSIVE IN THIS CLASS, IN WHICH NITRATE OF AMMONIUM, NITRATE OF SODIUM OR CHLORIDE OF SODIUM ARE USED AS INGREDIENTS, SHALL BE CONTAINED IN CARTRIDGE WRAPPERS OR CASES (OR IN FIVE-POUND INNER PACKAGES) MADE THOROUGHLY WATERPROOF WITH MELTED PARAFFIN OR OTHER SUITABLE WATERPROOFING MATERIAL.

ROBBINITE.

Cardox Composition.

M Powder.	}
Pranada.	
Q Powder	}

CLASS 3.—NITRO-COMPOUND.

The term "nitro-compound" means any chemical compound possessed of explosive properties or capable of combining with metals to form an explosive compound, which is produced by the chemical action of nitric acid (whether mixed or not with sulphuric acid) or of a nitrate mixed with sulphuric acid upon any carbonaceous substance, whether such compound is mechanically mixed with other substances or not.

The nitro-compound class has two divisions.

EVERY EXPLOSIVE IN THIS CLASS AND EVERY EXPLOSIVE INGREDIENT THEREOF SHALL BE SO THOROUGHLY PURIFIED AND OTHERWISE OF SUCH CHARACTER AS TO SATISFY A TEST KNOWN AS THE HEAT TEST, AND SPECIFIED IN THE RULE FOR TESTING EXPLOSIVES PUBLISHED WITH GOVERNMENT OF INDIA, DEPARTMENT OF COMMERCE AND INDUSTRY, NOTIFICATION No. 4013—33, DATED THE 6TH JUNE 1914, REFERRED TO ABOVE.

EVERY BLASTING EXPLOSIVE IN THIS CLASS, IN WHICH NITRATE OF AMMONIUM, NITRATE OF SODIUM, CHLORIDE OF SODIUM OR NITRO-GLYCOL ARE USED AS INGREDIENTS, SHALL BE CONTAINED IN CARTRIDGE WRAPPERS OR CASES (OR IN FIVE-POUND INNER PACKAGES) MADE THOROUGHLY WATERPROOF WITH MELTED PARAFFIN OR OTHER SUITABLE WATERPROOFING MATERIAL.

DIVISION 1.

Division 1 comprises the following explosives and any chemical compound or mechanically mixed preparation which consists either wholly or partly of nitro-glycerine or of some other liquid nitro-compound:—

- | | | | |
|-------------------------------------|--------------------------|-----------------------|---|
| A. I. Rounkol, | } | Cordite, M. D. | } |
| Amazonite. | | Du Pont Dynamite, 75 | |
| Brocalite Gelatine. | | per cent. Strength. | |
| Detonita. | | Dynamit. | |
| Dynamite B. | | Dynamite. | |
| Gelignite K. 34 per cent., | | Dynamite No. 1. | |
| N. G. | | Red Star Dynamite, 75 | |
| Glycerita. | | per cent. Strength. | |
| L. G. Gelatine. | | Dynobel No. 2. | |
| 25 per cent. Ligdyn. | | Dynobel No. 3. } | |
| Ardeer Gelignite. | | Dynobel No. 4. } | |
| Arkite. | | Farmers' Dynamite. | |
| Samsonita. } | | Gelatine Dynamite. | |
| Samsonite. } | | Gelignite. | |
| A. 2 Monobel. | | Monobel No. 1. | |
| Viking Powder No. 1. } | N. S. Gelatine Dynamite. | | |
| Viking Powder No. 2. } | N. S. Gelignite. | | |
| Ballistite. } | Polar Dynobel No. 2. | | |
| Nobel Cordite. } | Quarry Monobel. | | |
| Blasting Gelatine. | Rockite. | | |
| Cambrite. | Samsonite No. 3. | | |
| Chilworth Smokeless Powder No. 2. } | Stonobel. | | |
| Nacota Powder. | Victor Powder No. 2. | | |
| Cordite. | | | |

PROVIDED THAT EVERY EXPLOSIVE IN THIS DIVISION SHALL BE OF SUCH CHARACTER AND CONSISTENCY AS NOT TO BE LIABLE TO LIQUEFACTION OR EXUDATION OF NITRO-GLYCERINE.

PROVIDED ALSO THAT AN EXPLOSIVE WHICH IS REQUIRED BY DEFINITION TO BE ISSUED IN WATERPROOF INNER PACKAGES MAY BE EXEMPTED FROM SUCH REQUIREMENT BY SPECIAL AUTHORITY, WHEN AND SO LONG AS THE CONDITIONS OF SUCH AUTHORITY ARE OBSERVED.

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DIVISION 2.

Division 2 comprises the following explosives and any nitro-compound as before defined which is not comprised in division 1:—

- | | |
|--|--------------------------|
| Alumatol. } | Guncotton. |
| Ammonal. } | Negro Powder No. 2. |
| Amberite No. 2. | N. S. Smokeless. |
| Baelenite. | Picric Acid. |
| Di-nitro-phenol. | Picric Powder. |
| Economic Smokeless Sport- }
ing Powder. } | Roburite No. 4. |
| E. C. Sporting Powder. } | Ruby Powder. |
| Eley Smokeless Sporting }
Powder. } | Schultze Gunpowder. |
| Empire Powder. } | Smokeless Diamond. |
| Ideal Powder. } | Tonite or Cotton Powder. |
| Light Load Smokeless. } | Tri-nitro-toluol. |
| Nobel's Special Powder. } | |

CLASS 4.—CHLORATE MIXTURE.

The term "chlorate mixture" means any explosive containing a chlorate.

The chlorate mixture class has two divisions.

EVERY EXPLOSIVE IN THIS CLASS AND EVERY EXPLOSIVE INGREDIENT THEREOF SHALL BE SO THOROUGHLY PURIFIED AND OTHERWISE OF SUCH CHARACTER AS TO SATISFY A TEST KNOWN AS THE HEAT TEST, AND SPECIFIED IN THE RULE FOR TESTING EXPLOSIVES PUBLISHED WITH GOVERNMENT OF INDIA, DEPARTMENT OF COMMERCE AND INDUSTRY, NOTIFICATION No. 4013—33, DATED THE 6TH JUNE 1914, REFERRED TO ABOVE.

EVERY BLASTING EXPLOSIVE IN THIS CLASS, IN WHICH NITRATE OF AMMONIUM, NITRATE OF SODIUM OR CHLORIDE OF SODIUM ARE USED AS INGREDIENTS, SHALL BE CONTAINED IN CARTRIDGE WRAPPERS OR CASES (OR IN FIVE-POUND INNER PACKAGES) MADE THOROUGHLY WATERPROOF WITH MELTED PARAFFIN OR OTHER SUITABLE WATERPROOFING MATERIAL.

DIVISION 1.

Division 1 comprises any chlorate preparation which consists partly of nitro-glycerine or of some other liquid nitro-compound.

Nil.

PROVIDED THAT EVERY EXPLOSIVE IN THIS DIVISION SHALL BE OF SUCH CHARACTER AND CONSISTENCY AS NOT TO BE LIABLE TO LIQUEFACTION OR EXUDATION OF NITRO-GLYCERINE.

DIVISION 2.

Division 2 comprises any chlorate mixture as hereinbefore defined which is not comprised in Division 1.

Nil.

CLASS 5.—FULMINATE.

The term "fulminate" means any chemical compound or mechanical mixture, whether included in the foregoing classes or not, which, from its great susceptibility to detonation, is suitable for employment in percussion caps or any other appliances for developing detonation, or which, from its extreme sensibility to explosion, and from its great instability (that is to say, readiness to undergo decomposition from very slight exciting causes), is especially dangerous.

This class consists of two divisions.

DIVISION 1.

Division 1 comprises such compounds as the fulminates of silver and of mercury, and preparations of those substances, such as are used in percussion caps; and any preparation consisting of a mixture of a chlorate with phosphorus or certain descriptions of compounds of phosphorus, with or without the addition of carbonaceous matter, and any preparation consisting of a mixture of a chlorate with sulphur, or with a sulphuret, with or without carbonaceous matter.

Nil.

DIVISION 2.

Division 2 comprises such substances as the chloride and the iodide of nitrogen, fulminating gold and silver, diazobenzol, and the nitrate of diazobenzol.

Nil.

CLASS 6.—AMMUNITION.

The term "ammunition" means any explosive of any of the foregoing classes when the same is enclosed in any case or contrivance, or is otherwise adapted or prepared so as to form a cartridge or charge for small-arms, cannon or any other weapon, or for blasting or to form any safety or other fuze for blasting or for shells, or to form any tube for firing explosives or to form a percussion cap, detonator, fog-signal, shell, torpedo, war-rocket, or any other contrivance other than a firework.

The term "percussion cap" does not include a detonator.*

The term "detonator" means a capsule or case which is of such strength and construction and contains fulminate in such quantity, that the explosion of one capsule or case would communicate the explosion to other like capsule or cases.

The term "safety fuze" means a fuze for blasting which burns and does not explode and which does not contain its own means of ignition, and which is of such strength and construction and contains an explosive in such quantity that the burning of such fuze will not communicate laterally with other like fuzes.

The ammunition class has three divisions.

DIVISION 1.

Nobel's Safety Electric
Time Fuzes.
Percussion Caps.
Railway Fog-Signals.

Safety Cartridges.
Safety Fuzes for blasting.
Safety Electric Fuzes.

DIVISION 2.

Division 2 comprises any ammunition as hereinbefore defined, which does not contain its own means of ignition, and is not included in Division 1.

- Cartridges for Blasting or other like purposes.
- Cordeau Bickford.
- Electric Fuzes.
- Electric Primers.
- Fuze Lighters.
- Instantaneous Fuze.
- Port Fires.
- Tubes for firing Explosives.
- Quick Match.

* In consequence of the results of experiments carried out, it has been decided that a percussion cap can only be properly classed as such if it contains less than 0.6 grain of a composition of the 1st Division of the fifth (Fulminate) class of which not more than 25 per cent. consists of fulminate of mercury or less than 0.5 grain of any other explosive of the 1st Division of the 5th (Fulminate) class: and it has been further decided that percussion caps shall not be classed as such when they contain anvils or have their composition unprotected by tin foil or other suitable substance, as under those circumstances they are liable to explode *en masse*.

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DIVISION 3.

Division 3 comprises any ammunition as hereinbefore defined which contains its own means of ignition, and is not included in Division 1.

Cartridges for Small Arms which are not Safety Cartridges.

Detonators.

Electric Detonators.

Friction Tubes.

Nobel's Electric Delay Action Detonators.

Percussion Primers.

Tubes for firing Explosives.

CLASS 7.—FIREWORK.

The term "firework" comprises firework composition and manufactured fireworks.

DIVISION 1.—FIREWORK COMPOSITION.

The term "firework composition" means any chemical compound or mechanically mixed preparation of an explosive or inflammable nature, which is used for the purpose of making manufactured fireworks, and is not included in the former classes of explosives, and also any star and any coloured fire composition subject to the proviso to the definition of manufactured fireworks.

Nil.

DIVISION 2.—MANUFACTURED FIREWORKS.

MANUFACTURED FIREWORKS, consisting of any explosive of the classes 1, 2, 3, 4 and 6 and any firework composition, when such explosive or composition is enclosed in any case or contrivance or is otherwise manufactured so as to form a squib, cracker including Chinese crackers, toy cap or amorce, serpent, rocket (other than a war-rocket), maroon, lance, wheel, Chinese fire, Roman candle, or other article specially adapted for the production of pyrotechnic effects, or pyrotechnic signals or sound signals.

Provided that a substantially constructed and hermetically closed metal case, containing not more than one pound of coloured fire composition of such a nature as not to be liable to spontaneous ignition shall be deemed to be a "manufactured firework" and not a "firework composition".

Aluminium Torches. }

Electric Sparklers. }

Magnesium Torches. }

Amorces.

Chinese Crackers.

Light Signals.

Manufactured Fireworks.

Pyrotechnic Matches.

Rockets.

Sparklers.

P. W. ALLOWAY,

Offg. Chief Inspector of Explosives in India.

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APPENDIX F.

*List of petroleum premises licensed during the year 1933.

Presidency or Province.	District.	No.	Presidency or Province.	District.	No.
Aden	Aden	32		Brought forward	84
	TOTAL	32		Bogra	33
Ajmer-Merwara	Ajmer	40		Burdwan	103
	TOTAL	40		Calcutta	257
Andaman and Nicobar Islands.	Port Blair	2		Chittagong	39
	TOTAL	2		Dacca	71
Assam	Cachar	35	Bengal—concl'd.	Darjeeling	75
	Darrang	23		Dinajpur	11
	Goalpara	29		Faridpur	58
	Kamrup	36		Hooghly	29
	Khasi and Jaintia Hills.	4		Howrah	75
	Lakhimpur	59		Jalpaiguri	84
	Naga Hills	6		Jessore	36
	Nowgong	15		Khulna	32
	Sibsagar	73		Malda	18
	Sylhet	88		Midnapur	83
TOTAL	368	Murshidabad	34		
Baluchistan	Loralai	4	Mymensingh	47	
	Quetta	26	Nadia	47	
	Sibi	11	Noakhali	11	
	Zhob	8	Pabna	23	
	TOTAL	49	Rajshahi	36	
Bengal	Backerganj	39	Rangpur	70	
	Bankura	24	Tippera	65	
	Birbhum	21	24-Parganas	112	
	Carried over	84	TOTAL	1,533	

* This list includes installations and godowns for the storage of dangerous and non-dangerous petroleum regarding which this department has cognizance.

APPENDIX F—contd.

* List of petroleum premises licensed during the year 1933—contd.

Presidency or Province.	District.	No.	Presidency or Province.	District.	No.
Bihar and Orissa	Angul	3	Bombay—concl'd.	Brought forward . .	163
	Balasore	22		Bijapur	11
	Bhagalpur	60		Bombay	351
	Champaran	32		„ Suburban	2
	Cuttack	21		Broach	19
	Darbhanga	49		Dharwar	105
	Gaya	77		Hyderabad (Sind) . .	10
	Hazaribagh	53		Kaira	60
	Manbhum	59		Kanara	34
	Monghyr	56		Karachi	65
	Muzaffarpur	48		East Khandesh	101
	Palaman	15		West Khandesh	24
	Patna	108		Kolaba	42
	Puri	17		Kolhapur	5
	Purnea	33		Larkana	7
	Ranchi	26		Nasik	76
	Sambalpur	20		Panch Mahals	11
Saran	43	Poona	105		
Shahabad	80	Ratnagiri	74		
Singhbhum	61	Satara	39		
Sonthal Parganas	53	Sholapur	43		
TOTAL	936	Sukkur	10		
Bombay	Ahmedabad	65	Surat	35	
	Ahmednagar	31	Thana	45	
	Belgaum	67	TOTAL	1,437	
	Carried Over	163			

*This list includes installations and godowns for the storage of dangerous and non-dangerous petroleum regarding which this department has cognizance.

APPENDIX F—contd.

*List of petroleum premises licensed during the year 1933—contd.

Presidency or Province.	District.	No.	Presidency or Province.	District.	No.
Burma . . .	Amherst . . .	12	Burma—concl.	Brought forward . .	338
	Bassein . . .	4		Southern Shan States	10
	Bhamo . . .	3		Tavoy . . .	17
	Hanthawaddy . .	8		Tharrawaddy . .	10
	Insein . . .	3		Thaton . . .	7
	Katha . . .	3		Thayetmyo . .	13
	Kyaukpyu . . .	1		Toungoo . . .	11
	Kyaukse . . .	1		Upper Chindwin . .	3
	Lower Chindwin .	8		Yamethin . . .	7
	Magwe . . .	67		TOTAL . . .	416
	Mandalay . . .	14	Central India . .	Bhopal (Ry. land) .	7
	Maubin . . .	7	TOTAL . . .	7	
	Meiktila . . .	12	Central Provinces.	Akola . . .	91
	Mergui . . .	11		Amraoti . . .	79
	Minbu . . .	22		Balaghat . . .	15
	Myaungmya . . .	10		Betnl . . .	12
	Myingyan . . .	7		Bhandara . . .	39
	Myitkyina . . .	9		Bilaspur . . .	31
	Northern Shan States	18		Buldana . . .	65
	Pakokku . . .	21		Chanda . . .	25
Pegu . . .	21	Chhindwara . . .		26	
Prome . . .	11	Damoh . . .		6	
Rangoon . . .	60	Drug . . .	20		
Sagaing . . .	2	Hoahangabad . .	37		
Sandoway . . .	3	Jubbulpore . . .	44		
Carried over . .	338		Mandla . . .	8	
			Carried over . . .	498	

*This list includes installations and godowns for the storage of dangerous and non-dangerous petroleum regarding which this department has cognizance.

APPENDIX F—contd.

*List of petroleum premises licensed during the year 1933—contd.

Presidency or Province.	District.	No.	Presidency or Province.	District.	No.
Central Provinces—concl.	Brought forward . . .	498	Madras—concl.	Brought forward . . .	378
	Nagpur . . .	79		Guntur . . .	62
	Narsingpur . . .	6		Kistna . . .	42
	Nimar (Khandwa) . . .	26		Kurnool . . .	31
	Raipur . . .	42		Madras . . .	106
	Sangor . . .	10		Madura . . .	74
	Seoni . . .	9		Malabar . . .	138
	Wardha . . .	33		Nellore . . .	29
	Yeotmal . . .	37		The Nilgiris . . .	44
TOTAL . . .	740	North Arcot . . .		88	
Coorg . . .	13	Ramnad . . .		71	
TOTAL . . .	13	Salem . . .		38	
Delhi . . .	91	South Arcot . . .		51	
TOTAL . . .	91	South Kanara . . .		72	
Hyderabad . . .	Hyderabad . . .	38	Tanjore . . .	109	
	Secunderabad . . .	52	Tinnevelly . . .	38	
	TOTAL . . .	90	Trichinopoly . . .	56	
Madras . . .	Anantapur . . .	41	Vizagapatam . . .	56	
	Bellary . . .	28	TOTAL . . .	1,483	
	Chingleput . . .	41	Mysore . . .	Bangalore . . .	50
	Chittoor . . .	35	TOTAL . . .	50	
	Coimbatore . . .	79	North-West Frontier Province.	Bannu . . .	3
	Cuddapah . . .	12		Dera Ismail Khan . . .	8
Ganjam . . .	42	Hazara . . .		27	
East Godavari . . .	51	Kohat . . .		13	
West Godavari . . .	49	Peshawar . . .		80	
Carried over . . .	378	TOTAL . . .	131		

* This list includes installations and godowns for the storage of dangerous and non-dangerous petroleum regarding which this department has cognizance.

APPENDIX F—contd.

*List of petroleum premises licensed during the year 1933—contd.

Presidency or Province.	District.	No.	Presidency or Province.	District.	No.
Punjab	Ambala	52	Rajputana	Jaipur (Ry. Land)	2
	Amritsar	29		Alwar (")	2
	Attock	20		TOTAL	4
	Dera Ghazi Khan	6		Agra	37
	Ferozepore	15	Aligarh	49	
	Gujranwala	22	Allahabad	53	
	Gujrat	14	Almora	3	
	Gurdaspur	50	Azamgarh	21	
	Gurgaon	15	Bahraich	15	
	Hissar	31	Ballia	10	
	H shiarpur	9	Banda	25	
	Jhelum	11	Bara Banki	13	
	Jullundur	20	Bareilly	24	
	Kangra	4	Basti	31	
	Karnal	26	Benares	42	
	Lahore	59	Bijnor	10	
	Ludhiana	18	Budaun	7	
	Lyalpur	41	Bulandshahr	27	
	Mianwali	6	Cawnpore	57	
	Multan	7	Dehra Dun	32	
	Muzaffargarh	5	Etah	9	
	Patiala	5	Etawah	19	
	Rawalpindi	75	Furrukhabad	25	
	Shahpur	13	Fatehpur	11	
	Sheikhupura	20	Fyzabad	13	
	Sialkot	18	Garhwal	7	
	Simla	2	Ghazipur	9	
	TOTAL	593	Carried over	549	

*This list includes installations and godowns for the storage of dangerous and non-dangerous petroleum regarding which this department has cognizance.

APPENDIX F—concl'd.

*List of petroleum premises licensed during the year 1933—concl'd.

Presidency or Province.	District.	No.	Presidency or Province.	District.	No.
	Brought forward	549			
	Gonda . . .	37			
	Gorakhpur . . .	26			
	Hamirpur . . .	9			
	Jalann . . .	5			
	Jaunpur . . .	1			
	Jhansi . . .	46			
	Kheri . . .	24			
	Lucknow . . .	65			
	Mainpuri . . .	26			
	Meerut . . .	54			
	Mirzapur . . .	36			
United Provin- ces—concl'd.	Moradabad . . .	13			
	Muttra . . .	20			
	Muzaffarnagar . . .	23			
	Naini Tal . . .	14			
	Partabgarh . . .	24			
	Pilibhit . . .	3			
	Rae Bareilly . . .	14			
	Saharanpur . . .	29			
	Shahjahanpur . . .	12			
	Sitapur . . .	22			
	Sultanpur . . .	10			
	Unao . . .	9			
	TOTAL	1,071			

*This list includes installations and godowns for the storage of dangerous and non-dangerous petroleum regarding which this department has cognizance.

SUMMARY.

Presidency or Province.	No.
Aden	32
Ajmer-Merwara	40
Andaman and Nicobar Islands	2
Assam	368
Baluchistan	49
Bengal	1,533
Bihar and Orissa	936
Bombay	1,437
Burma	416
Central India	7
Central Provinces.	740
Coorg	13
Delhi	91
Hyderabad	90
Madras	1,483
Mysore	50
North-West Frontier Province	131
Punjab	593
Rajputana	4
United Provinces	1,071
TOTAL	9,086

APPENDIX G.

* Accidents by fire or explosion which have been brought to the notice of the Explosives Department from 1st January 1933 to 31st December 1933.

EXPLOSIVES.

No.	Date of accident.	Nature of explosive.	Where accident occurred.	Circumstances of accident so far as ascertained.	NUMBER OF PERSONS.	
					Killed.	Injured.
1	22nd Aug. 1933.	Gunpowder.	Sunkerpore Colliery, Burdwan District.	While a quantity of country gunpowder was being dried on the top of a Larca-shire boiler, the powder was ignited and a woman who was in charge was fatally burnt. It was presumed that some of the powder, which was in close proximity to one of the dampers, was carried into the flue by the down draught and ignited. The Colliery Manager was sentenced to pay a fine of Rs. 350 or in default to undergo rigorous imprisonment for 3 months. The gunpowder supplier was sentenced to undergo rigorous imprisonment for 3 months under Section 286, I. P. C., and for 9 months and a fine of Rs. 200 or in default rigorous imprisonment for 3 months more under Section 304-A, I. P. C.	1	...
				Total	1	...
2	8th Oct. 1933.	Fulminate	Ultadanga Road, Calcutta.	While two boys were preparing throw down bombs with a mixture of chlorate of potash and sulphide of arsenic there was a sudden explosion resulting in serious injuries to one of them. He was removed to hospital where he succumbed to his injuries. The person who sold them the ingredients was prosecuted and sentenced to pay a fine of Rs. 60 or in default to undergo rigorous imprisonment for six weeks.	1	...
3	13th Oct. 1933.	Do.	Saraspur, District Ahmedabad.	Some boys were playing with fire-works. One of them had an iron pipe and filled it with a mixture of chlorate of potash and sulphur. While he was firing the pipe it burst and caused injuries to 4 of them.	...	4

APPENDIX G—contd.

Accidents by fire or explosion which have been brought to the notice of the Explosives Department from 1st January 1933 to 31st December 1933
—contd.

EXPLOSIVES—contd.

No.	Date of accident.	Nature of explosive.	Where accident occurred.	Circumstances of accident so far as ascertained.	NUMBER OF PERSONS.	
					Killed.	Injured.
4	17th Oct. 1933.	Fulminate	Shambazar, Calcutta.	A vegetable seller was grinding chlorate of potash and sulphur on the cemented platform near a vegetable stall for preparing <i>patakas</i> (throwdowns) when the mixture burst and burnt him. He was convicted and sentenced to pay a fine of Rs. 10 or in default to undergo 10 days' rigorous imprisonment.	...	1
5	3rd Dec. 1933.	Do.	Ludhiana	While a person was preparing <i>patakas</i> (throwdowns) with a mixture of sulphide of arsenic and chlorate of potash on the roof of his house, the mixture contained in an earthen pitcher suddenly exploded causing injuries to him. He died in hospital after 6 days.	1	...
Total					2	5
6	23rd Oct. 1933.	Ammunition.	Hawal Street, Colaba, Bombay.	With a view to firing <i>espuletas</i> (<i>amorces</i>) a boy went to a dunghill to look up for a stone. In the dunghill he found a cartridge. He picked it up, placed its cap downwards on an <i>espuletas</i> and struck the lead portion of the cartridge with a piece of stone with the result that the cartridge exploded causing injury to his fingers.	...	1
Total					...	1
7	31st Jan. 1933.	Fireworks	Ambapadi Village, South Kanara District.	A servant of a licensee was preparing some fireworks in an unlicensed tiled building when the fireworks under preparation suddenly caught fire. The servant died from the burns received. It was reported that the cause of the explosion could not be ascertained.	1	...

APPENDIX G—contd.

Accidents by fire or explosion which have been brought to the notice of the Explosives Department from 1st January 1933 to 31st December 1933—contd.

EXPLOSIVES—contd.

No.	Date of accident.	Nature of explosive.	Where accident occurred.	Circumstances of accident so far as ascertained.	NUMBER OF PERSONS.	
					Killed.	Injured.
8	27nd Feb. 1933.	Fireworks	Kadirnaick-enpalayam, District Coimbatore.	On the night of occurrence there was a crowd of about 1,000 people at the above village to celebrate Kariakale Amman festival. A woman left a basket containing fireworks in the crowd and went away. A person picked up a firework from the basket, lighted it by a torch and placed it close to the basket with the result that the fireworks in the basket caught fire and 8 persons who were close to the basket sustained injuries. Two of them died in the hospital later. The person was convicted and sentenced to 6 months' rigorous imprisonment	2	6
9	10th Mar. 1933.	Do.	Badagabettu, South Kanara District.	Some servants of a licensee were engaged in manufacturing fireworks. While they were grinding gunpowder fire occurred as a result of which 2 servants sustained injuries. One of them died later. The fire was probably due to grit getting into the gunpowder.	1	1
10	22nd Mar. 1933.	Do.	Mazagaon Road, Bombay.	A person was pounding some explosive substance, believed to be a mixture of sulphur and chlorate of potash, in a cast iron mortar with an iron pestle outside the door of his room for preparing fireworks for the marriage of a friend, when the mixture exploded causing injuries to him.	...	1
11	19th May 1933.	Do.	Andheri	Three boys were employed by a licensee to pound waste sparkler composition and one boy for passing the powdered material through a sieve in the compound of the licensed premises. The material was being pound-	1	2

APPENDIX G—contd.

Accidents by fire or explosion which have been brought to the notice of the Explosives Department from 1st January 1933 to 31st December 1933—
contd.

EXPLOSIVES—contd.

No.	Date of accident.	Nature of explosive.	Where accident occurred.	Circumstances of accident so far as ascertained.	NUMBER OF PERSONS.	
					Killed.	Injured.
12	3rd June 1933.	Fireworks	Hariali, Bombay Suburban District.	ed in a zinc lined iron mortar placed on a wooden frame and a piece of water pipe with a wooden plug projecting 1" used as a pestle. The fire started in the mortar and spread to the material lying about the place. Three of the boys were seriously injured, one of whom succumbed to his injuries on the same evening. The fire was probably due to matches having got into the material and being pounded with it.	2	1
				Amorces or paper caps for toy pistols were being manufactured as an experiment in a factory licensed in form A of the Indian Explosives Rules, 1914. On the day of occurrence the pasting process was being carried out by a Chemist, a Mukadam and 3 workers in a room exclusively set apart for the purpose and some sheets of paper with dots of explosive which had been prepared, were kept in the room to dry. The Chemist while leaving the room handed over its keys to the Mukadam and instructed him not to open it, but in spite of his instructions the Mukadam opened the room and was getting work from the workers. As gust of wind coming through a window was blowing the sheets of paper, one of the workers put a thick card board on them when the explosive on them exploded and caused injuries to the workers, two of whom succumbed to their injuries.		

APPENDIX G—contd.

Accidents by fire or explosion which have been brought to the notice of the Explosives Department from 1st January 1933 to 31st December 1933—contd.

EXPLOSIVES—contd.

No.	Date of accident.	Nature of explosive.	Where accident occurred.	Circumstances of accident so far as ascertained.	NUMBER OF PERSONS.	
					Kill-d.	Injured.
13	24th June 1933.	Fireworks	Byadgi, District Dharwar.	Two children of a licensee were playing on the upper storey of his residential house when their clothes caught fire probably while lighting electric sparkler, which had been kept there for them to play with. The licensee and three females who were at that time on the ground floor rushed upstairs. In their attempt to extinguish the fire all of them sustained injuries. The children however succumbed to their injuries later.	2	4
14	18th July 1933.	Do.	Comilla	While a licensee was preparing crackers with a mixture of chlorate of potash and arsenic sulphide in the verandah of his house one cracker came in contact with fire and exploded causing serious injuries to him. He was taken to hospital where he died before any medical aid could be rendered to him.	1	...
15	12th October 1933	Do.	Jhowtala Road, Calcutta.	A person was preparing fireworks with a fulminate mixture in his Stationery Shop when the mixture suddenly exploded causing injuries to him. He died in hospital next morning. A boy who had gone to the shop to purchase a kite and was waiting for the same was also injured.	1	1
16	12th October 1933	Do.	Vizagapatam	A serious explosion took place while fireworks were being manufactured clandestinely on a large scale in a two-storied building in the midst of the town which resulted in the death of 10 persons and injuries to six others. As all the persons who were engaged in the manufacture of fireworks upstairs, where the explosion occurred, were dead, the cause of the explosion could not be ascertained.	10	6

APPENDIX G—contd.

Accidents by fire or explosion which have been brought to the notice of the Explosives Department from 1st January 1933 to 31st December 1933—
contd.

EXPLOSIVES—contd.

No.	Date of accident.	Nature of explosive.	Where accident occurred.	Circumstances of accident so far as ascertained.	NUMBER OF PERSONS.	
					Killed.	Injured.
17	14th October 1933.	Fireworks	Jamai, Chhindwara District.	On the day of occurrence a licensee was displaying his fireworks on a wooden platform in the market in front of other shops. At a distance of about 50 paces from this platform a rival cracker seller was holding his shop. From morning each shopkeeper was getting several crackers exploded to attract customers to his shop. Towards evening with a view to making a big sound a protege of the licensee was filling some powder into a cylindrical tin with a pen knife and there was a crowd of spectators, purchasers and wayfarers near the licensee's shop when the powder exploded causing injuries to 15 persons, two of whom died.	2	13
18	9th Nov. 1933.	Do.	Coimbatore.	A licensee was absent from his shop and there were his son and a coolie. The latter was hammering the top portion of a rocket when all of a sudden the rocket took fire which ignited the fire-works kept there. The licensee's son ran away but the coolie was badly burnt, his clothing having caught fire. He was removed to hospital where he died in the same night.	1	...
19	4th Dec. 1933.	Do.	Bogra.	A person was manufacturing some crackers in his house when accidentally the cracker, which he was making, exploded, causing the stock of powder also to explode simultaneously. He sustained serious injuries and died shortly after.	1	...

APPENDIX G—contd.

Accidents by fire or explosion which have been brought to the notice of the Explosives Department from 1st January 1933 to 31st December 1933—
contd.

EXPLOSIVES—concl'd.

No.	Date of accident.	Nature of Explosive.	Where accident occurred.	Circumstances of accident so far as ascertained.	NUMBER OF PERSONS.	
					Killed.	Injured.
20	25th Dec. 1933.	Fireworks	Sonapur, Bombay.	An explosion occurred in one of the 2 rooms of a building where-in fireworks had been stored by a licensee, as a result of which two inmates of the 2nd room were injured. It was reported that the cause of the explosion could not be ascertained.	...	2
Total					25	37

APPENDIX G—contd.

Accidents by fire or explosion which have been brought to the notice of the Explosives Department from 1st January 1933 to 31st December 1933—
contd.

PETROLEUM.

No.	Date of accident.	Nature of Oil.	Where accident occurred.	Circumstances of accident so far as ascertained.	NUMBER OF PERSONS.	
					Killed.	Injured.
1	16th Feb. 1933.	Petrol	Wadala, Bombay.	A muccadam and two coolies of the Western India Oil Distributing Company were cleaning empty iron barrels. They at first cleaned some barrels inside the Compound of the Co.'s petrol installation and brought 4 barrels outside the compound and placed them over a trench. They poured 4 buckets of water and some washing soda in each barrel and then lighted fuel inside the trench to heat the barrels and clean them. While the barrels were being heated, one of them on the extreme left suddenly exploded, hurled upwards coming in contact with and killing a person who was standing near the place. It is suspected that the barrel contained petrol.	1	...
2	26th Feb. 1933.	Do.	Rupai Tea Estate, Lakhimpur District.	An assistant of Rupai Tea Estate went to their petrol godown after sunset with a lantern. He placed the lantern at a distance of 4 yards from the godown and brought out a cask of petrol near the doorway of the godown. While he was opening the cask, petrol vapour escaped from it and was ignited by coming in contact with the light of the lantern as a result of which the cask exploded and he was burnt to death.	1	...
3	9th May 1933.	Crude Oil	Twingon Reserve.	A fire took place in the British Burma Petroleum Company's Oil Well No. 72 while one casing head was being removed with a view to substituting another for the purpose of cleaning the well, which resulted in the death of six coolies. The fire was probably due to the gas escaping through the nipple, which was loose, being ignited by the fire of the boiler.	6	...

APPENDIX G—*concl.*

Accidents by fire or explosion which have been brought to the notice of the Explosives Department from 1st January 1933 to 31st December 1933—concl.

PETROLEUM—*concl.*

No.	Date of accident.	Nature of Oil.	Where accident occurred.	Circumstances of accident so far as ascertained.	NUMBER OF PERSONS.	
					Killed.	Injured.
4	16th June 1933.	Petrol .	70, Ashu-tish Mukherjee Road, Calcutta.	The driver of a private car after filling his car's tank with petrol from a petrol pump was starting it when it accidentally caught fire, which caused injuries to the petrol seller.	...	1
Total .					8	1

APPENDIX G—concl'd.

Accidents by fire or explosion which have been brought to the notice of the Explosives Department from 1st January 1933 to 31st December 1933—concl'd.

MISCELLANEOUS.

No.	Date of accident.	Nature of substance.	Where accident occurred.	Circumstances of accident so far as ascertained.	NUMBER OF PERSONS.	
					Killed.	Injured.
1	28th Apl. 1933.	Ammonia.	Sukkur	A cylinder containing ammonia had been lying in the stores portion of the factory of Messrs. Dwarkadas & Co. for about 9 weeks near some 4 cwts. crude oil drums where it had been exposed to direct solar heat from about midday onwards on each day. On the day of occurrence at about 8-45 A.M. the oil drums were being moved in the vicinity of the cylinder when the latter exploded causing injuries to two persons one of whom died. It was reported that the cause of the accident could not be ascertained with certainty. Overfilling combined with a high temperature is the most likely cause accentuated by a defective weld.	1	1
				Total	1	1

APPENDIX H.

Summary of accidents during the year 1933.

Explosives or dangerous and inflammable substances.	ACCIDENTS CAUSING LOSS OF LIFE AND BODILY INJURY.			Accidents not causing loss of life or bodily injury.	Total number of accidents.
	Number of accidents.	NUMBER OF PERSONS.			
		Killed.	Injured.		
<i>Explosives.</i>					
Gunpowder . . .	1	1	...	...	1
Nitro-compounds . .	...	...	...	...	...
Chlorate Mixture . .	...	...	...	...	...
Fulminates . . .	4	2	5	...	4
Ammunition . . .	1	...	1	...	1
Fireworks . . .	14	25	37	...	14
Liquid Oxygen . . .	...	...	...	...	...
TOTAL . . .	20	28	43	...	20
<i>Petroleum.</i>					
Petroleum generally . .	4	8	1	...	4
TOTAL . . .	4	8	1	...	4
Chemicals . . .	...	...	...	...	...
TOTAL . . .	...	...	...	...	...
Miscellaneous . . .	1	1	1	...	1
TOTAL . . .	1	1	1	...	1
GRAND TOTAL . . .	25	37	48	...	25

APPENDIX I.

Detailed statement showing the number of accidents and persons killed and injured during the ten years ending 1933.

Year.	GUNPOWDER.			DYNAMITE AND OTHER NITRO-COMPOUND BLASTING EXPLOSIVES.			CHLORATE MIXTURE.			FULMINATE.			AMMUNITION.			FIREWORKS.			LIQUID OXYGEN EXPLOSIVES.		
	Number of accidents.	Persons killed.	Persons injured.	Number of accidents.	Persons killed.	Persons injured.	Number of accidents.	Persons killed.	Persons injured.	Number of accidents.	Persons killed.	Persons injured.	Number of accidents.	Persons killed.	Persons injured.	Number of accidents.	Persons killed.	Persons injured.	Number of accidents.	Persons killed.	Persons injured.
1924	7	27	11	1	1	...	...	...	...	7	4	7	...	...	...	17	14	12	...	...	...
1925	9	19	11	3	2	11	...	...	...	8	...	10	3	...	17	13	9	9	...	...	...
1926	9	27	36	1	...	2	...	...	...	12	5	23	2	...	7	16	20	34	...	...	...
1927	8	5	7	2	8	18	...	...	...	6	1	22	3	1	4	23	16	20	...	...	...
1928	14	12	17	3	1	10	...	...	...	5	...	5	3	...	3	10	7	63	...	...	...
1929	6	21	4	1	1	...	...	...	...	2	1	1	1	...	1	6	11	13	1	3	...
1930	4	7	1	2	1	6	...	...	...	4	...	7	3	1	8	30	42	36	...	...	...
1931	9	16	13	3	1	4	...	...	...	2	...	3	2	...	3	11	12	60	...	...	...
1932	2	3	1	...	...	...	...	...	...	5	4	15	2	...	2	13	22	17	...	...	...
1933	1	1	...	...	...	...	...	...	...	4	2	5	1	...	1	14	25	37	...	...	...
TOTAL	69	138	101	16	15	51	...	...	...	55	17	98	20	2	46	153	178	291	1	3	...
AVERAGE	7	14	10	2	1	5	...	...	...	5	2	10	2	1	5	15	18	29	1	1	...

APPENDIX I—concl'd.

Detailed statement showing the number of accidents and persons killed and injured during the ten years ending 1933—concl'd.

Year.	PETROLEUM.			CHEMICALS.			MISCELLANEOUS.		
	Number of accidents.	Persons killed.	Persons injured.	Number of accidents.	Persons killed.	Persons injured.	Number of accidents.	Persons killed.	Persons injured.
1924	8	6	8	2	3	5	1	3	...
1925	8	8	15	2	...	10	3	...	1
1926	6	5	18	...	...	...	3	...	8
1927	9	5	8	2	...	9	1	...	...
1928	9	61	26	1	...	3	2	2	1
1929	16	26	28	...	...	...	4	1	5
1930	8	2	11	...	...	...	1	...	1
1931	10	19	6	...	...	...	1	...	1
1932	4	9	10	...	...	...	2	...	2
1933	4	8	1	...	...	...	1	1	1
TOTAL	82	149	131	7	3	27	19	7	20
AVERAGE	8	15	13	1	1	3	2	1	2

APPENDIX J.

Comparative statement showing the number of accidents and persons killed and injured during the ten years ending 1933.

Year.	ACCIDENTS CAUSING LOSS OF LIFE OR BODILY INJURY.				Accidents not causing loss of life or bodily injury.	Total number of accidents.
	Number of accidents.	NUMBER OF PERSONS.				
		Killed.	Injured.			
1924	40	58	43	3	43	
1925	45	38	84	4	49	
1926	49	57	128	...	49	
1927	49	36	88	5	54	
1928	46	83	128	1	47	
1929	37	64	52	4	41	
1930	52	53	70	...	52	
1931	37	48	90	1	38	
1932	28	38	47	...	28	
1933	25	37	45	...	25	
TOTAL	408	512	775	18	426	
AVERAGE	41	51	77	2	43	



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